

MICHEL (R.F.)

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EPIDEMIC YELLOW FEVER

IN MONTGOMERY, ALA.,

SUMMER OF 1873,

By R. F. MICHEL, M. D.

It is eighteen years since the City of Montgomery was visited by an epidemic of Yellow Fever; but, in common with several sister cities of the South, she has again been compelled to pass through the trying ordeal.

It is not the object of this paper to enter into a learned disquisition upon the pathology and treatment of this disease, for after the labors of LaRoche and the leading medical writers of Charleston, New Orleans and Mobile, it would be almost presumptuous. But feeling the necessity of a proper medical record for our city, and that the historian may hereafter find some material to guide him in his researches, I have determined to give a brief, but, I hope, proper account of the epidemic through which we have just passed.

I do not believe that our fair city should be placed in the Yellow Fever Zone; and if by any possible means she can be there assigned, I, for one, am determined that her position shall be upon its Northern border.

My opinions with regard to the contagion and importation of Yellow Fever are well known to all of my medical friends in Charleston. A non-contagionist, and one who believes as much in its local origin, as in its being an exotic, can with good grace take the position, that the disease which proved so fatal this year in the City of Montgomery was brought from abroad; did not spring up on its soil; was accidental, and does not properly belong to its climate.

For two months prior to the visit of Yellow Fever we had been imminently threatened with Asiatic Cholera. Two of the cities of the State, Huntsville and Birmingham, were being then

seriously damaged by the havoc of that rapidly fatal disease. Indeed, one case absolutely made its way into our capital, but, fortunately for us, did not take root. In consequence of this condition of affairs, our city authorities worked well, and worked hard, to fend off the threatened invasion; and, with credit to them, be it said, they were absolutely successful. With lime, carbolic acid and coal-refuse scattered freely over the surface of the city; with our soil undisturbed, cellars dry, and the offal thrown on the banks of the river, we were safe, perfectly safe, from the disease. I mention this fact in order to call the attention of the profession to the inutility of hunting for a *local cause* upon which to build any theory with regard to the advent of Yellow Fever in the year 1873 in the City of Montgomery.

Whence came it? and, how did it progress? are the questions most likely to occur, and to their consideration I now invite your attention.

I propose to show that the Fever was brought from Pensacola, Florida, by two persons, viz, Mr. D. H. Cram, President of the Pensacola and Louisville Railroad, and Mollie Jackson, a white woman. Both of these persons were in Pensacola when the Yellow Fever broke out, and had been living near the first recognized cases.

See Mollie Jackson left Pensacola on the ninth day of August, arrived in Montgomery on the 10th, and went to the house owned by Mr. Collins, on Clay street, South side, two doors from the corner of ~~W~~hikerson, marked M. J. on map. Mr. Cram left Pensacola on the 14th day of August, arrived in Montgomery on the 15th day of August, and went to his home, at the corner of McDonough and Madison streets, owned by Mr. Stubbs, marked D. H. C. on map.

Mollie Jackson was taken sick on Sunday morning, August the 17th. I was sent for, and found that she had had a *chill* in the night, and her pulse and general condition indicated *fever*. I visited her four days, and upon the declination of the fever my bill was settled, and I informed that if needed I would be sent for.

Upon the morning of the 27th of August I was requested to give an interment certificate; and, not knowing at that time that she died of Yellow Fever, gave as cause of death "Congestive Fever," having seen her only through the febrile paroxysm, and not suspecting at the time that she was from Pensacola, or that there was an epidemic in that city.

My friends, Drs. Johnston and Douglass, examined the body after death, and I was informed by Dr. Johnston that he looked upon the case as one of Yellow Fever, in consequence of the extreme yellowness of the skin. I immediately determined to examine the nurses who waited upon the case; and, after a careful cross-examination of each witness, I became perfectly convinced

that Mollie Jackson died of Yellow Fever, contracted at her residence, *exactly* opposite the hospital in Pensacola. I may, in this connection, state that one of her nurses went to West Point, Georgia, "sickened with fever, was very ill, and threw up blood from the stomach during the attack," according to *her* own statement.

Now, with this nucleus, what occurred in this neighborhood? Case after case repeated itself, and almost every house in the three blocks adjoining became infected.

Opposite the house of Mollie Jackson are four houses, the property of Messrs. Barrett and Collins, and in every one there were cases of Yellow Fever, and two or more deaths by this disease—the Breshears, Robinsons, Harveys, Alexanders and Georgie Harris.

Turning the corner of Dickerson street we find two houses, one occupied by the Wilsons, the other by the Mulchays. A death in both, preceded by black vomit, determined the character of the disease; while just opposite, on Bell street, Dr. Herreford reports three cases and one death at the Singletarys; Dr. Norton two cases in the family of the Campbells.

We find in the street marked Herron, every house in that neighborhood visited, except two. The Hales, Pat. Thornton, O'Brians, Sanderson, Browns, Stewarts and Kelleys, fill up the sad history of this memorable block. Dunham's Row, according to the testimony of Drs. Norton, Means, Johnston, Michel, and others, suffered in common with the surrounding locality; while to the rear, on Holt street, we find the serious illness of the Rays and Wings. The next parallel street, marked Martha, also furnishes cases of this severe disease, in the persons of the Curans, Temples, Stuarts and Ovens; particularly sad and fatal in the last family.

It would be idle to dwell further upon the history of this part of the city. The *resumé* of the cases demonstrates how this ward suffered, and the dark outline of death marks well the surroundings of Mollie Jackson.

Mr. D. H. Cram, as already stated, arrived on the 15th day of August, was taken sick the night of the 17th or 20th, and had a fever, which lasted several days.

I believe his attack was Yellow Fever, and I will now proceed to give my reasons for this statement, although *I did not see him during his sickness.*

Being President of the Pensacola and Louisville Railroad, Mr. Cram was compelled, in the official discharge of his duties, to remain in Pensacola as long as possible, and I have no doubt that sleeping in the locality in which he did, he was fully exposed to the poison.

I here take the liberty of introducing a part of a very valuable letter, written me by Dr. R. B. S. Hargis, of Pensacola, upon the

epidemic in that city. This letter was written in answer to some questions propounded to him by myself. Dr. Hargis is well known to the medical public, through his valuable contributions to the literature of Yellow Fever:

“PENSACOLA, November 6th, 1873.

DR. R. F. MICHEL, *Montgomery, Alabama*:

MY DEAR DOCTOR: After some days of unavoidable delay, in compliance with my promise, I essay to answer your letter dated the 20th ult., trusting that I may be able to communicate the information which you desire, so as to render it useful to you, in some degree, at least:

1st. Mrs. Nasite arrived in Pensacola, from New Orleans, on the 22d of July; got sick on the 7th of August, and died on the 13th of August.

2d. Mrs. Pfeiffer was taken sick on the 9th, according to her husband's statement; but from the condition in which I found her, I believe she was taken down on the 7th. I saw her for the first time on the 10th; she was then “bronzed;” had hemorrhages from the nose, mouth, buccal mucous membrane, fauces, and uterus; black vomit on the 11th, 12th and 13th; died on the 14th, in the morning.

3d. Captain Ed. Dunn sickened on the 14th of August; had black vomit and recovered slowly.

4th. The *Golden Dream* came into port (from Havana) on the 10th of June, and went immediately into quarantine, detained there twenty-four days, and admitted to protigue on the 3d of July.

5th. The sailor from the Revenue Cutter *Petrel*, eight days on board the *Golden Dream*, sickened on the 2d day of August, and died with black vomit on the 5th of August.

6th. The *Golden Dream* sailed on the 16th of August, and was lost on the 30th of August, just as I predicted, in consequence of “*getting short of hands*” by the ravages of the monster she fostered on board.

Several of the stevedores who worked on board that ill-fated vessel, the *Golden Dream*, contracted Yellow Fever, from sources of infection within that very filthy craft itself, at different times during the interval between the 5th and 16th of August. These men lived outside the infected district, and communicated the disease to the inmates of their houses, and these houses became separate and distinct *foci* which radiated the infectious principle in all directions.

7th. I believe, indeed, I am certain, that the Yellow Fever was introduced into Pensacola this Summer (1873) by the *Golden Dream*.

I predicted that she would introduce it, if allowed to anchor within the distance of a thousand yards from the wharves. The

atmosphere, as I before intimated, was in a favorable condition for many days, in July and August, for the propagation of infectious germs of any kind from a foreign source.

8th. Mr. D. H. Cram left Pensacola on the 14th day of August, the same day on which Mrs. Pfeiffer died. The distance between his office and the room in which Mrs. Pfeiffer died is about eighty to ninety feet, nothing intervening but air and dust, and whatever else that may have been *invisible*. Mr. Cram, however, had been inhaling the same deleterious principle that poisoned Mrs. Pfeiffer a week at least before the latter was taken sick. So was Mrs. Nasite and the rest.

Mrs. Nasite resided on Intendentia street, that which crosses Taragone street at right angles, East and West, one block from the Railroad Depot on Taragone street, where Mr. Cram's office is situated. Mrs. Nasite was not removed.

Now, Mrs. Nasite and Mrs. Pfeiffer were the first two deaths, but not the first cases. The first three cases were taken sick at the same time, on the 6th of August, in the same house, the residence of Mr. W. McKinzie Orthing, Deputy Harbor Master, on Romana street, two squares distant, North of Mr. Cram's office. Mr. Orthing, no doubt, carried the germs of the disease home in his clothes, as he had been frequently on board of the vessel, and stayed there many hours at a time. But as nearly all the first cases sickened about the same time, on the 7th, I believe that the infection was transported from the ship by the winds, and leavened the atmosphere in its course.

The next four cases occurred on Romana street, near the residence of Mr. Orthing, on the 7th of August. After this time two or three new cases appeared daily, until the 15th, when the disease became epidemic.

The width of the district first infected, measuring from East to West, was about one square, a little more perhaps, and did not increase for fifteen days; it extended, however, for a mile, in the direction of the winds, Northeast. The disease spread over the city from different centres, or foci, created by persons who contracted the malady, either from the ship itself, or from the atmosphere of the infected part of the city, wherein they exposed themselves by visiting at night.

Now, that there may be no misapprehension in regard to the origin and mode of propagation of the epidemic here, I shall make a few additional observations, and then briefly recapitulate what has been already stated, and include in the recapitulation other sporadic cases that intercurrent at different dates, between the 6th of August and 15th of the same month.

The atmosphere had been for some time previously to the introduction of the disease in a favorable condition to foster any new morbid principle that might be introduced, and continued during the epidemic, with very slight variations, to maintain that

state. It was humid, negative with respect to electricity, free from ozone, and continued at a mean temperature of 80° Fah. Our endemic diseases became rife about the middle of July, and prevailed until the Yellow Fever made its appearance, and then, *as always*, every other disease either assumed its livery or was united with the nature of itself.

The winds came from the South and Southwest during the day, and from about the 28th of July until the epidemic had become general, about the 20th of August, it swept gently over the Golden Dream from the Southwest, and carried with it through the "devoted" district the infectious matter which that vessel brought with her from Havana.

The Golden Dream laid off about five hundred yards from the beach. The first case of which we have any certain knowledge that occurred on board of this vessel, after she left the Quarantine Station, was that of the sailor from the cutter Petrel. He was taken sick on the 2d of August, and died on the 5th, with black vomit. The first cases in the city appeared on the 6th of August, at Mr. Orthing's; next in order were those at Mr. Kaber's, Mr. Chandler's, Mrs. Nasite and Mrs. Pfeiffer's, on the 7th; then the several stevedores, one or two daily, until Ed. Dunn fell sick, on the 14th day of August—afterwards epidemic.

Our population, after the fever made its appearance, was reduced, "*by the stampede*," to about three thousand, of whom, in round numbers, one thousand were liable to contract the disease. It is estimated that of the latter six hundred were attacked; the mortality numbered just sixty-one.

Here, my dear doctor, this communication must terminate. I have written necessarily in haste; it is, therefore, very imperfect, but you can eliminate the facts it contains, and rest assured that they are "*facts*."

I am, very respectfully,

Your obedient servant,

ROBERT B. S. HARGIS."

It may not be irrelevant, just here, to quote from a letter written me by my revered teacher, Professor S. H. Dickson, dated Philadelphia, October 20th, 1867, and in answer to the question I had propounded: "At what distances have you known Yellow Fever to radiate from a centre?"

"MY DEAR DOCTOR: As to the Yellow Fever question, the true mode of regarding all such particular instances, is fairly this: Decide the general question—is the disease portable, communicable, contagious in any sense? If so, there can be no difficulty as to one hundred or two hundred yards of interval, or fomites, or currents of air, and the like.

We cannot trace small-pox always, nor measles, much less mumps and whooping cough; but the obscurity of the links of

connection does not shake our belief of the dependence of every case that we meet with on some preceding case.

Dr. Thomas Y. Simons, whom you remember as Quarantine Physician, and an obstinate non-contagionist, told me that he had known the lapse of twenty-five days between exposure and attack in Yellow Fever.

I remain, dear doctor, yours, truly,

SAMUEL H. DICKSON."

I think my readers have sufficient evidence for my statement that Mr. D. H. Cram and Mollie Jackson were exposed, in Pensacola, to the *Yellow Fever poison*, and, indeed, did not leave there until the epidemic prevalence of the disease.

In addition, I may mention the fact that Mr. Cram's physician, just returned from a healthy locality in Virginia, became quite sick during the month of August, or early in September, and his convalescence was so protracted that I incline to the opinion that he suffered with the same disease.

Now for the sequel. With Mr. Cram as a nucleus, let us critically observe what took place in this portion of our city—*Ward 5.*

On Madison street, next door to Mr. Cram, is a house owned by Mr. Noble, and occupied by Germans, some of whom had lately arrived from Illinois.

The distance from the chamber in which Mr. Cram was sick, to this house is exactly thirty-two yards.

On Friday, September 4th, one of the inmates took sick, Mr. John G. Schan, and died on the 12th day of September. On the same day (September 4th) Mr. Heinecke, of the same family, also sickened and died on the 14th day of September. Geo. Fisher, another inmate of the house, sickened on the night of the 6th of September, and died September 14th; and, again, another of the family, Ed. Heinecke, took sick on Tuesday, September 16th, and died on the 21st. The last remaining male inhabitant of that fatal building, Mr. F. Schan, aged twenty-nine years, and the proprietor of the establishment, sickened, as reported by his physician, Dr. J. M. Williams, and on Thursday, the 25th day of September, at half-past eight o'clock A. M., breathed his last. Dr. Williams reported this case as Yellow Fever. I saw Mr. Schan, in consultation with the doctor. We examined the black vomit carefully, and I reported the result of that examination to the Board of Health.

I believe that every one of these five persons died of Yellow Fever, and I think I am sustained in this opinion by two of the attending physicians.

In Mr. Cram's kitchen, fifteen yards from this house, Jim Higgins, husband of Mr. Cram's nurse, sickened and died with Yellow Fever. I saw this case at the request of the attending physician.

Several persons visited the sick Germans, and many of them sickened; among these I may mention Eugenia Harris, McCarthy, and Schnaibel. These three had Yellow Fever, the first two dying with black vomit.

On McDonough street, next to Cram's, is a row of brick buildings, owned by Mr. Stubbs and the Fountain Estate; not one of these residences escaped. The Bealls, the W^{as}s, Mrs. Sistrunk (and I am here saddened by this last record), sickened, and many of them died. The lovely lady named, although removed promptly to a different part of our city, in order to escape the terrible pestilence, became instantly sick, and died of Yellow Fever.

In the Inglehart House, on Monroe street, are two deaths by the epidemic disease, and on the next block we observe that not a house escaped; each was visited severely; it has been well termed the *fatal point* in the city. Harris lost three children; Moncreef, McCarthy, Mr. Mathews, the Copees and Caminades, all died; and, in my house, on the same block, there occurred two very severe cases. My neighbor, Mr. Woolfe, suffered also from an attack. In these two blocks we have seventeen houses; three were uninhabited, the Washburns, the Fountains and Jannyes; and, at the close of the epidemic, we see reported eighteen deaths in this locality by Yellow Fever.

I call attention to the fact, that up to a certain date, the ravages of this disease were confined almost entirely to the two wards, one and five.

But suddenly we are notified of the sickness of Mr. Putnam Larkins, who was attacked on Saturday, the 27th of September. This gentleman died of Yellow Fever, on the 3d of October, in the very centre of the city, opposite the Masonic Temple, as shown on the map.

Now, from this point, the disease stealthily crept up Commerce and Court streets, affixing its fatal mark upon many buildings on each side of the way—Halzer, Jim Walker, Yung, Fremon, Goodwyn, the fatal Begg's corner, with five deaths in one family, Miss Cheney, Sewys, our distinguished physician, Dr. Jackson, Isaac, and the Spannerburgers, give evidence of the regular advancement of this horrible disease.

From these points it radiated in every direction, and our city soon fell a victim to one of the most fatal and extensive epidemics of Yellow Fever ever experienced by its inhabitants.

The *extent* and *severity* of the *epidemic* I propose to prove by the fact that no portion of our city escaped, and that of the few, very few, white persons who remained, the number not exceeding eighteen hundred, between four and five hundred sickened with the disease.

On examining the number of white families who lived, *day and night*, on the three most important streets of the city—Court, Perry and Madison—I find only seventeen to be recorded. In

fact, on Madison, only the Brittons, Michels and Harrisses remained.

With regard to the mortality, the Board of Health reports eighty cases of deaths by Yellow Fever. To this permit me to add the following persons, who, in my opinion, died of the same disease, notwithstanding the interment certificate given: Mollie Jackson, Mrs. D. W. Wilson, G. Schan, T. Schan, Heinecke, Sr., Ed. Heinecke, Jr., Fisher, Mrs. E. Holland, Mrs. Sistrunk, Miss Spanenburger, Fred. Stewart, Fannie Stewart, Jim Higgins, Mrs. Glover, John Pollard, T. Terry, Hannah Mason, Julia Ware, McCutchen, B. F. Benton, D. Packer, D. S. French—twenty-two.

Of the five hundred cases, we therefore lost at the smallest calculation one hundred persons, some of them our most valuable and prominent citizens. Of the hundred, sixty are accredited to ward five, twelve to ward one, and twenty-eight scattered.

A remarkable feature in the history of this epidemic is the number of colored persons who were attacked. It is true, however, that very few died.

In Charleston, although occasionally one of this class fell a victim to the disease, they, as a people, were considered almost exempt. I do not remember seeing half a dozen black persons sick with Yellow Fever in the many epidemics I witnessed during my professional life in Charleston.*

A few persons, after leaving our city, became subjects of the disease; two dying, and several recovering. The disease however *did not spread* in the localities in which they occurred, viz, Mr. Attoway, West Point; John Pollard, Auburn; Mrs. Glover, Tuskegee; Mr. Thorgheville, Wetumpka; Mr. E. M. Thouse, Talladega; Miss Nellie Woolfe, Greenville; Mrs. F. Woolfe, Greenville.

Another important question for our consideration is this—did we have any other epidemic disease to treat during the sojourn of Yellow Fever in our city?

The physicians of Montgomery are well acquainted with the fact that, during the months of August, September, and especially October, we are generally busily engaged in attending malarial diseases. It is remarkable that these milder diseases were rarely visible after the appearance of Yellow Fever. They moved out of the way, to give precedence to this terrible pestilence. As the distinguished Dr. Rush, of Philadelphia, well said: "When the giant Yellow Fever makes his entrance into a city, all other diseases at once put on his livery."

The difficulty with most of the people is to understand the fact that, in an epidemic of Yellow Fever, we have a great many

*NOTE.—Our experience differs from that of Dr. M. We have seen numerous cases among the blacks during our epidemics, but these were of light character, and usually ended in recovery.—[EDS.]

mild cases. Some of our patients are only kept in bed forty-eight or seventy-two hours, but that fact does not prevent us from properly calling these cases **Yellow Fever**.

Take an epidemic of Asiatic Cholera, painful, terrific, and rapidly fatal. See what Professor Niemeyer says of cases of simple diarrhœa occurring during such a period:

"The mildest form is a simple diarrhœa, which is not accompanied by colicky pains or tenesmus, and causes no constitutional or other disturbance, except a moderate degree of depression and relaxation. The evacuations follow each other more or less closely; they are very copious and watery, but have neither lost their odor nor color. These cases do not appear on the official lists as cholera; but although the police do not consider them as such, science should do so."

These persons transport Asiatic Cholera by their *dejecta*.

Now, if these simple cases are regarded as mild attacks of Asiatic Cholera, why should we not at once admit the mild cases of Yellow Fever, attended simply by a *chill*, followed by *fever*, pain in the head and back, and slow convalescence?

I here quote a part of a letter written me by Professor R. A. Kinloch, of Charleston, dated November 8th, 1873:

"Look almost anywhere for authority, and you find the fact admitted that there is the 'mild,' or '*simple*' form, as well as the '*gravior*' and the '*malignant*' form of *Yellow Fever*. Blair, I think, it is, who says, '*you may have the disease from a flea-bite to the plague*.' That is appearing as a case of the simplest kind of mild sickness, or again assuming the form of a terribly malignant disease.

"In my short reply to Professor Jones, in the October number of the *Charleston Medical Journal and Review*, I refer to the several varieties. The thing is to recognize *different degrees of susceptibility, and of acclimation* in the individual; and also *different doses of the poison, or degrees of its dilution*. This will explain all. Take, if you please, either Scarlet Fever, or Asiatic Cholera, and you see this point equally well exemplified.

"Epidemics differ much in this regard, some having a very large proportion of grave cases; others the reverse.

Yours, in haste,

R. A. KINLOCH."

I have said repeatedly and positively to my professional friends that we had no dengue or anything like it in Montgomery during the prevalence of Yellow Fever, and I will now give my reasons for the faith that is in me.

Professor Dickson, the most elaborate writer upon Dengue, thus describes it:

"Dengue usually made its invasion with pain, stiffness, and swelling of some of the smaller joints, often of the muscles of a limb, rigidity of the neck, aching of the back and loins. These

pains were followed, after an uncertain, though generally brief period, by headache, suffusion of the eyes; abrupt, full, frequent pulse; hot, pungent, dry skin, restlessness, thirst, and other tokens of febrile excitement. The fever did not remit, but declined and disappeared in a great majority of cases on the second or third day. In this early stage the tongue was generally clean, and the stomach quiet; but sometimes there was nausea or even vomiting, the determination to the head was occasionally violent. Instances occurred in which delirium was among the first symptoms, coming on at the commencement and enduring until the subsidence of the febrile paroxysm. At this time the skin lost its heat and dryness, becoming relaxed, with abundant perspiration, and the local pains were all lessened in degree. A sort of milary eruption, or rash in some persons, attended this sweating stage, and in a few others preceded both the local pains and the fever. It was, however, as connected with this first stage of dengue, a very inconstant symptom, seeming rather a coincidence than a symptom. The pains of the joints and muscles which, as has been said, were diminished in severity at the subsidence of the febrile exacerbation, did not go off entirely; a degree of swelling, stiffness, and tenderness of the affected parts remaining permanently, though varying much in intensity in different individuals. This condition of things constituted a sort of deceptive interval between what may be described as the first and second stages of this strange disease. Many now believed themselves to have passed through the attack, and attempted to resume their ordinary occupations; but soon had occasion to discover that their sufferings were by no means at an end. On the third or fourth day, there being no fever present, or a very obscure degree of it, the tongue would begin to be coated with a yellowish fur, and the stomach would become distressed, uneasy and irritable. The patient was now low-spirited, fretful and anxious. Vomiting came on in some, with great languor, lassitude, debility, and restlessness at night. This was regarded as the most oppressive and insufferable of the stages of the malady. On the fifth or sixth day from the invasion, the period varying somewhat in different individuals, the annoying symptoms just described were relieved by the coming out of an abundant eruption, met with so constantly and in so very great proportion of the cases, that it clearly demands to be considered a characteristic and essential circumstance in the history of the disease. It consisted of minute papulae, somewhat elevated, of a florid red, and distributed in irregularly shaped patches; the feet and hands being somewhat swollen, with a sense of numbness and thickening. It appeared first on the face, then on the trunk and thighs, gradually spreading to the extremities. It resembled scarlatina more than measles, in the hue and aspect of the skin, but was less diffused or confluent than either. When fully developed, it

was attended with some itching and burning of the surface, and at this time a second febrile paroxysm came on, with return or aggravation of the muscular and arthritic pains. Inflammation and enlargement of the lymphatic glands in the neck, axilla and groin, attended in a good many cases; these parts being apt to continue swollen and painful for some time after convalescence was finally established. In a few instances suppuration of these tumors took place. The eruption disappeared after two or three days' duration, becoming gradually paler, with some desquamation of the cuticle. Of all the symptoms of dengue the affection of the joints was the most tenacious and troublesome, adhering for weeks to some patients, and constituting a sort of permanent lameness or loss of mobility. Nay, even so late as 1835, some of the population of cities visited by this plague persisted in speaking of the rheumatic or quasi-rheumatic decrepitude and pain under which they labored as the effects of dengue.

"Pregnant women, when attacked, were very liable to abortion, and a remarkable number of miscarriages and premature labors occurred. A sore mouth was among the frequent symptoms; ulcers formed in the mouth. Dengue is to be classed properly among the exanthemata. It is an eruptive fever of distinct and specific character. Its essential symptoms are, in the first stage, a painful affection of the joints and muscles; and, in the second, divided by an interval obvious and sufficiently regular, a cutaneous eruption. The arthritic inflammation of the first stage was attended by fever of the ordinary inflammatory type, of twenty-four to forty-eight hours' duration. The eruption was preceded, as is usual in the exanthemata, by considerable gastric oppression, with nausea, and sometimes vomiting."

We must insist upon the fact that mild cases of Yellow Fever be not confounded with this painful, very painful, but perfectly harmless affection, well known to the profession as free entirely from danger to life, which it may annoy, but never destroys.

Look carefully at the premonitory symptoms; watch well the kind and severity of the pains, which mark the onset, continuance and termination of dengue. No chill—mark that; no mention of even a rigor. Observe the intermission, not accidental, not occurring by chance, but regular, never deviating, always coming to the relief of the sufferer, and to be counted with certainty by the hands of the clock. Then examine the secondary fever, accompanied always by an eruption that Dr. Dickson says, "clearly demands to be considered a characteristic and essential circumstance in the history of the disease." Look at the prompt convalescence of dengue, with the deformed and enlarged joints; the patient, staggering about, bald-headed, with stick in one hand, or crutch in both. Observe the common accident of abortions and premature labors, and then say if this condition of things resembles, however remotely, not the violent cases of Yellow

Fever, with black vomit, discoloration and bleeding from gums, lips and nose, but the milder and more numerous cases of Yellow Fever frequently met with during an epidemic, easy of control, but very tardy in convalescence.

Pathologically considered, dengue is one of the exanthemata, and I challenge the proof that it has ever been regarded as "a hemorrhagic disease," by any standard authority. No one values authority more than I do, but I must insist (not in a name) that the authority carry with it force and character upon the subject matter under consideration. I repeat, that I do not believe there was any dengue in our city during the Yellow Fever epidemic, and the profession bears me out in this statement. At a meeting of the members of the Montgomery Medical and Surgical Society, for the purpose of discussing the epidemic of Yellow Fever, it was unanimously decided, by the physicians who were in Montgomery during the epidemic, that no such disease as dengue had been observed.

With reference to the pathology of Yellow Fever, I have hardly anything to say. We made no *post mortem* examinations, and very few chemical investigations; consequently the researches of Blair, Lewis, and Joseph Jones, were not again repeated and confirmed. I examined the urine and the black vomit of several cases; found albumen as stated by Blair in the one, and the characteristic features of the others, as *first insisted* upon by Dr. Middleton Michel, in the *Charleston Medical Journal*, May, 1853, and by Dr. Hassell, of London, for February, of the same year.

Dr. Joseph Jones has stated that the lesions of the heart are characteristic in this disease; that the heart is structurally altered and enfeebled; oil and granular albuminoid or fibroid matter, is deposited within and around the muscular fibrillæ, and the organ after death presents a yellow, flabby appearance. He says we must keep our patients quiet, in order that the heart may be restored to its free and vigorous action. The profession owe Dr. Jones a debt of gratitude for his very practical pathological demonstrations.

This feeble condition of heart was frequently observed. In the case of my son, Middleton Michel, I found his heart at forty for three days and nights, and for several hours during that time only beating thirty-eight per minute.

It is well known that this peculiar disease, in its initial stage, may be characterized by individual idiosyncrasy. I know of five cases in which the disease was ushered in with convulsions, and most of these were in persons of intemperate habits.

Some of the cases were prolonged for fifteen or twenty days before they terminated fatally, while others were rapid in their results. Mrs. Shields died with black vomit, exactly eighty-five hours after the initiatory chill. Most of the fatal cases, however,

are recorded as dying on the fifth or ninth day. Abortions occurring during the febrile attack, as a general rule, proved fatal. This was not the case when the product of conception was carried to its full term. Mrs. D. and Mrs. B., subjects of the disease, recovered promptly, and the children are doing well. Almost all of the cases occurring among females were accompanied by hemorrhage from the uterus. This bloody sweat from the mucous membrane of the vagina and uterus was first described as a symptom of Yellow Fever, by Dr. Middleton Michel, in the eighth volume of the *Charleston Medical Journal*. I was present and assisted my brother in these pathological investigations, and can now further confirm his statements from observations during this epidemic.

TREATMENT.

With regard to treatment, the profession here generally believing the disease self-limiting, seldom resorted to medicine.

When called to see a case, the patient was placed in a hot mustard bath; castor oil or seidlitz powders were resorted to as aperient; very few, if any, administered mercurials. Mild diaphoretics and diuretics were used, as orange-leaf tea, black tea, or sage tea. After the full effect of the bath was realized, the action on the skin was kept up by warm mustard pediluvia administered under the covering, without exposure of the person.

In the stage of restlessness, chloral was given generally by the rectum, rarely by the mouth, with good effect. Narcotics were regarded as unsafe remedies. For myself, as soon as I found sighing, respiration, and frequent eructation, I generally placed a large blister on the epigastric region. In the case of my son, who had black vomit, I feel assured that it controlled the nausea.

Stimulants, as a general rule, were avoided, except during convalescence, when they were used in order to assist the heart in its propulsive efforts. Brandy and Champagne were those most frequently given. In cases attended with great prostration they were very cautiously administered during the febrile stage.

Solid food was strenuously avoided; but beef tea, milk and lime water, gruel, chicken broth, and arrow root, permitted.

Rest, absolute rest, was insisted upon; and hence very few cases of sudden death during convalescence are reported. An equable temperature in the sick room was constantly maintained.

Quinine was only used as a prophylactic, and in some cases with apparent success.

It will be observed, on examining the tables of Mr. G. A. Clum,* to whose kindness I am indebted for the valuable meteorological records, kept carefully by him during the epidemic, that the fever

*These tables, for want of space, we have to exclude.—[Eds.]

travelled with, and against the wind; and that rain, or clear weather, made no material difference in its severity. But when we come to the consideration of the effect of cold, we find again the old established and well understood principle carried out: Frost destroyed the Yellow Fever poison in Montgomery, just as it does in every locality.

The first frost occurred on the twenty-first morning of October. This was so slight as not even to kill tender garden plants, and many persons in the city denied its existence. On the morning of the 29th of October we were favored with a "black frost," frost with ice. The same thing occurred on the following morning, and on the morning of the 31st of October we had a white frost.

Now, taking nine days for the full period of incubation, and nine days for disease and death, we should not have a death by Yellow Fever recorded after the sixteenth day of November. And this calculation is correct, for we observe that the last death by Yellow Fever (subject Mr. Leroy Taylor) occurred on the tenth day of November, at 12 M.

Previous to this epidemic, Montgomery had been visited three years consecutively by Yellow Fever—1853, 1854, 1855.

Having no medical record to guide us in drawing a comparison between these visitations, and the one through which we have just passed, I have selected a most reliable account, carefully prepared by an old citizen. This record has been kept with zealous care, in the Supreme Court Library of the State.

In comparing these three epidemics with that of 1873, it is very observable that the disease this year has been more grave, more extensive, and remained with us longer than it ever did before:

"The Yellow Fever was first declared to exist in this city the latter part of September, 1853. The first interment from the disease was on the 22d of that month. The total interments for that month were twenty-eight whites and eight colored; of the whites, nine were Yellow Fever. In October, 1853, of the fifty-three whites interred, twenty-two were from the fever. In November, 1853, there were four interments from the fever.

"In September, 1854, there were twelve whites interred, of which six were from Yellow Fever. In October, 1854, of the fifty-two whites interred, thirty-seven were of persons dying from that fever. The largest number buried in one day, was on Sunday, the 22d of October, 1854, which was the following named *seven*: Joseph Knox, James Narramore, Mrs. Clara Connally, Oliver Reed, Miss Francis McGuire, Mary Binnard, and Isidore Binnard. In November, 1854, there were two interments from the fever.

"In September, 1855, of the seventeen whites interred, seven were from Yellow Fever, and, in October, twenty-one of the

thirty-four were from the same disease. In November, 1855, there were two Yellow Fever interments, among the whites."

The Board of Health of Montgomery declared the disease epidemic on the sixteenth day of October, in accordance with the well known rule governing the Boards of Mobile and New Orleans, viz: "That the deaths by the epidemic disease should exceed the deaths by all other causes"—a rule as arbitrary as unscientific; one to be honored more in the breach than the observance.

My only object in referring to this matter is to enter again my protest. I earnestly hope that the Boards of Health may be governed hereafter by a different rule.

I beg to introduce to the readers of the *Journal*, two intelligent and authoritative letters, written me during the late epidemic, upon the subject of *Epidemicity*. One from Professor Bemiss, of the University of Louisiana; the other from Professor Kinloch, of the Medical College of the State of South Carolina:

"NEW ORLEANS, October 18, 1873.

TO DR. R. F. MICHEL:

DEAR DOCTOR: Undoubtedly, in a purely professional sense, the term epidemic is applied to diseases with very different degrees of prevalence, so that it becomes difficult to decide when, as physicians, we should pronounce a malady "epidemic." I should say, that in a professional use of the term, we ought to regard any disease as epidemic which has become so prevalent in a population, that we meet examples of it more frequently than we meet with cases of any other one form of disease. In respect to all those diseases which are admitted to be in any manner communicable, it is quite usual to declare them epidemic before they have reached this degree of prevalence; and we are certainly right in doing so, when, by any kind of sanitary measures, we may be able to diminish the number of attacks.

The difficulty in answering your question has presented itself time and time again to the Boards of Health of this city, until they at last adopted *an arbitrary rule* for obtaining it. This is, to declare a disease to be epidemic when the deaths due to it, exceed in number those from all other causes combined.

I write with very great haste, but have given you as frank an answer as I am capable of making.

Very respectfully,
L. M. BEMISS."

"CHARLESTON, S. C., October 18, 1873.

MY DEAR DOCTOR: In answer to your card, I can only say that you put a difficult question, and one that can only be arbitrarily answered. An epidemic disease in a city is, of course, as the derivation of the word implies, a disease that is *upon the*

people, or, as I understand it, one that affects so many persons as to attract marked attention, and lead to apprehension of a greater spread of said disease, depending, as is believed, upon an unusual prevailing influence.

When the disease is a well recognized one, and one known as a rule to prevail epidemically, as does Cholera and Yellow Fever, the fact of the existence of almost any unusual number of cases, not confined to a limited section, but scattered, and leading to the inference that any of the people may be the next victims, I think entitles the disease to be called epidemic. As I intimated before, it would be simply arbitrary to limit the name epidemic to a definite number of cases. If you fixed upon *fifty cases* as the number necessary to constitute an epidemic, I might with equal propriety insist that *twenty cases* were sufficient.

It occurs to me, that the proper ground to take is that founded upon the reasonable probability of the disease spreading. In other words, if the cases are so numerous, occur in such quick succession, and are so scattered as to locality, as to render questionable the idea of their being *simply sporadic*, I would consider the disease epidemic.

Under such circumstances I should say that twenty or thirty well marked cases of the disease would warrant any one in considering the disease epidemic.

I don't know whether this answer will satisfy you. It is the best I can give.

Truly yours,

R. A. KINLOCH.

Dr. R. F. MICHEL, *Montgomery, Ala.*"

In conclusion, permit me to say that it is a fact, remarkable in the history of this epidemic, that so many of our profession should have been attacked. While it serves to illustrate the zeal and devotion which characterize the profession to which we belong, it also most significantly demonstrates the highly infectious nature of the terrible disease with which we have had to contend. I take great pleasure in recording the names of the gentlemen who, while disinterestedly laboring for the preservation of human life, suffered with the disease: Drs. E. A. Semple, S. D. Seelye, F. Lynch, W. C. Jackson, J. B. Gaston, F. Persall, J. A. Fremon, and James Douglass.

ERRATA.

Page 3, line 5 : for "her" read "his."

Page 8, line 7 : for "the Bealls, the Wans," read "the Bealls, the Wares."

Page 8, line 33 : for "Halzer" read "Holzer."

Page 8, line 35 : for "Sewys" read "Lewys."

Page 15, line 18 : insert after Yellow Fever, "reported by the Board of Health."

NOTE.—The Map referred to was lost by Post Office Department, while on its way to publishers.

